

From owner-qrp-l@netcom.com Sun Mar 12 17:43:36 1995
Message-Id: <199503121928.LAA14958@mail.netcom.com>
Date: Sun, 12 Mar 95 11:29 PST
From: Michael Stein <OSYSMAS@MVS.OAC.UCLA.EDU>
Subject: (Copy) Beckman 3010 meter/measure Z in

> But if this is a DMM, or bench Digi volt meter, (you did not
> describe); and just a few years old, say 10, it is likely 10 Meg
> ohms input impedance. At worst it would be 1 megohm, because
> Beckman always had quality meters before they got into the
> present handhelds that are 10 meg ohm input.

I have a Beckman 310 (at least 10 years old) and it's 22 Mohms.
This is one of the older DMMs before the newer/cheaper ones came
out. I got it because of the 200 hour battery warning. Right,
"warning", battery life is 2000 hours...

From owner-qrp-l@netcom.com Sun Mar 12 22:00:27 1995
From: Michael Marmor <mmarmor@pluto.njcc.com>
Message-Id: <199503122344.SAA10723@pluto.njcc.com>
Subject: 40A / first QRP QSO
Date: Sun, 12 Mar 1995 18:44:18 -0500 (EST)

I can't tell you how happy I am with my Norcal 40a! This is my
first tiny QRP-only transceiver. Last night I fired up my newly
built 40A and experienced my very first QRP contact. I have been
reading this list for months and have even built a few receiver and
simple transmitter circuits - I'll admit it - I'm more comfortable
with a soldering iron than a morse code key. After reading about
all the fun everyone was having actually operating (the fox hunt,
milli-watting, backpacking....even canoeing!) I decided I had
better get on the air!

I ordered the Norcal 40a and that night started listening
"seriously" to 80 meters using my Neophyte. I decided that I would
listen every night and try to improve my code copying and operating
procedures - after all I had a month until my 40a would arrive.
After a few nights of listening I decided to splurge and order
myself a Virbroplex Iambic Deluxe paddle to replace my awkward
homebrew paddle that I learned code on. The Vibroplex paddle is
NICE!!

Anyway, I worked on my code, bought a fancy new paddle, built the
40a and had my first QRP contact last night. He was only a few
miles away in Manalapan NJ (I'm in Princeton NJ) but it was GREAT!!
My second contact with the 40a was AA8BX in West Lafayette OH - Ray
told me that my "2 watts sounded really nice in Ohio" -- What
a kick!! This QRP stuff really DOES work! As my nervous sounding

CW fist improves I can see this becoming REALLY FUN!

Lots of thanks to Norcal, Wayne Burdick, qrp-l, and everyone involved in making the NC40A so cool.

I'll look for you on the air!!! 73 de AA2UJ
Michael Marmor - mmarmor@pluto.njcc.com

From owner-qrp-l@netcom.com Sun Mar 12 19:54:13 1995
From: David Johnson <djohnson@acpub.duke.edu>
Message-Id: <199503122226.RAA01645@raphael.acpub.duke.edu>
Subject: ant queries
Date: Sun, 12 Mar 1995 17:26:18 -0500 (EST)

Hi Tim:

Thanks for sending some interesting questions our way about antennas, one of my all-time favorite subjects! I'm no real expert, but have some 'real-world' experience. You asked about paralleling your 2m ground-plane and 40m wire antennas. Hmm, sounds interesting. But first of all, you should realize that on 2m, that rg58 has higher loss than at 40m. Not sure how much your 50ft run would drop your signal, but probably it's about 2-3 dB (roughly). Also, paralleling the antennae would introduce additional reactances which would essentially "detune" both.

Having said that, I will also ask if you have a "tuner" (transmatch or antenna tuner, etc.) which covers 40m and/or 2m? You may be able to find a conjugate match with the device, allowing you to use just such an arrangement fairly effectively. Of course, just because you match the impedance of your transmitter to that of your antenna system, doesn't mean the system will be an effective radiator! But I say give it a try, if you have a tuner, since people load up bed springs! Hey!

I built up a little tuner for 2m that allows me to load up almost any metallic object. Found plans in one of the ham mags, and it was fun and easy to build. Commercial tuners covering 40m are easy to find.

Of course, the answer to the question of whether that arrangement would cause you to radiate a signal on 40m when using your 2m transmitter is decidedly NO, unless of course there was a 40m spurious signal in the output of your 2m rig! Ha!Antennas don't generate RF. But don't ever feel bad about asking questions, because that's a great way to learn, and to keep your brain cells active!

Actually my advice would be to think of alternatives for your 2m

antenna arrangement, which would allow you to use a shorter feedline to a separate 2m antenna. OR, you can build the 2m tuner, and use it to load up the 40m wire antenna! Yes, I've done that with my dipole-type antenna, and get in fine to the local repeaters. That feedline loss on 2m is something to consider, but if you can still talk to whoever you are trying to talk to, who cares??

Best wishes on you on all your antenna projects, and please keep us informed of your progress, as we all like to learn from one another!

Dave

--

David W. Johnson	Power is no substitute for skill
Amateur Extra WA4NID	QRP ARCI 6546
email: djohnson@acpub.duke.edu	G-QRP 4864
packet WA4NID@KB4WGA.NC.USA.NA	NorCal 355

From owner-qrp-l@netcom.com Sun Mar 12 19:52:39 1995
Date: Thu, 09 Mar 1995 00:41:16 GMT
From: g3rjv@gqrp.demon.co.uk (Rev George Dobbs)
Message-Id: <3111@gqrp.demon.co.uk>
Subject: DAYTON FRIDAY FORUM

Friday 1500Hhrs - I think - check program -

BUILDING HF TRANSCEIVERS
George Dobbs G3RJV

Introduced by Bill Kelsey N8ET
A Guide to Building a Complete Station
from the simplest possible to the rather more complex
Approaches - Examples - Schematics - All with actual examples on display
Many backed up with kits
Direct Conversion - Single Signal DC - Superhet
CW and SSB - Single Band and Multiband

See you there !

--

George Dobbs G3RJV "It is vain to do with more,
G-QRP Club what can be done with less."
----- William of Occam (1290-1350)

From owner-qrp-l@netcom.com Sun Mar 12 11:59:57 1995
Date: Sun, 12 Mar 1995 09:28:37 +0001 (EST)
From: Timothy M Huntington <tmh@world.std.com>
Subject: Feedline(s)
Message-Id: <Pine.3.89.9503120905.A1971-01000000@world.std.com>

My only HF rig is a NE 40-40. This is a basic (and possibly quite stupid) question about feedlines.

I live in a basement apartment, but have access to a huge roof deck on the fourth floor of the building. My 40m dipole hangs from a chimney down over this deck. My feedline is RG-58, high quality Belden, and runs down the back of the building. I can't remember, but I think it took a 50 foot spool to cover the distance.

Question: I want to add a 2m ground plane to this chimney. Do I have to run a whole new--expensive!-- feedline for it? What happens if I put my 40m dipole and my 2m ground plane on the same feedline?

My guess is that a 40m QRP signal won't notice the ground plane antenna that's in parallel.

But-- when I transmit 20 watts or more on 2m, could the 2m signal "show up" as messy interference on the 40m band, or, will it be attenuated on 2m?

In general, I've never seen discussion of using one feedline for several antennas. Do you need separate feedlines? Since each antenna is presumably resonant for it's band, do the added non-resonant antennas just introduce a little loss?

Am totally in the dark-- any illumination would be appreciated. As far as I could tell _Now You're Talking_ doesn't cover this at all.

Tim
N1PAZ
tmh@world.std.com

From owner-qrp-l@netcom.com Sun Mar 12 10:20:41 1995
Date: Sun, 12 Mar 1995 07:47:55 -0600 (CST)
From: TCJC Library <tcjcslib@metronet.com>
Subject: Re: Index Labs QRP+
Message-Id: <Pine.HPP.3.90.950312073630.10437A-100000@fohnix.metronet.com>

Hi Robert - as an avid WW canoeist I find the OHR explorer plenty small to fit into a corner of a dry bag along with a random wire & gel cell. Can't speak for the others, but at least space isn't quite the delima with us as the backpackers ;-)

I prefer the longwire with a good counterpoise system [one or two radials/band] - easier to put up since I never had much luck with verticles and QRP unless I installed dozens of radials -- generally less susceptible to local power line QRN also, and no lossy traps common in the 40-10 verticles [especially an old one]. If you go with the verticle clean it up well and take the time to install LOTS of radials. I prefer the KISS principle and stick to the random wire ;-)

Where do you canoe? Most of mine is Arkansas with ocassional trips back east to run the O'coee, Chatooga, etc. Often don't take a rig along but have run the hw-8 in the past and a pm-3 years before that. Working on the ohr explorer and if i ever get the time to finish it i plan for it to be the rig of choice on trips [40 mtr version]

73 'Doc' W5TB

From owner-qrp-l@netcom.com Sun Mar 12 22:44:32 1995
Date: Sun, 12 Mar 1995 19:41:54 -0500
Message-Id: <199503130041.TAA29629@detroit.freenet.org>
From: af514@detroit.freenet.org (Hank Kohl)
Subject: Michigan QRP Club

If there is anyone out there who has any
 (a.) problems with membership
 (b.) problems with subscriptions to The 5 Watter
 (c.) questions about MI QRP
please do not hesitate to let me know.

Send your concerns to me, not qrp-l! And you can copy in the MI QRP president, Lowell Corbin, KD8FR@aol.com We will try to get back to you in a timely manner.

If you would rather use the US Mail, both Lowell and I are good in the callbook.

If you use e-mail, I will acknowledge your MI QRP related e-mail. If you do not get an acknowledgement in 2 or 3 days, assume that I either didn't get it, or lost it in downloading from the freenet to my computer box via michnet and the ameritech packet switch - it has happened.

73 es hope to see you all at Dayton, Findlay or on the air,
Hank K8DD
1640 Henry
Port Huron, MI 48060-2523

810 982 7088 (7 PM - 10 PM ET)

--

/*
/* email af514@detroit.freenet.org
/* call k8dd hank port huron, mi
/*

From owner-qrp-1@netcom.com Sun Mar 12 07:21:00 1995
Date: Sun, 12 Mar 1995 00:57:03 -0800 (PST)
From: Stephen Lee <slee@u.washington.edu>
Subject: Mike & Key Hamfest
Message-Id: <Pine.A32.3.91c.950312001739.47133C-100000@homer19.u.washington.edu>

Well folks, the Seattle Mike & Key Radio Club Hamfest was a fine event this year. There was one club and one big name representing QRP interests at this year's fest. Oh, and one Heathkit HW-8 in good condition for sale at an asking price of \$150.00. Definitely low key QRP.

At the Northwest QRP Club table, there was one rig operating...a QRP+. Man, are those things compact or what! I didn't get a chance to tinker with it as the owner was hovering over it fairly closely. He was quite surprised I knew what it was on sight...educated guess on my part.

At yet another table, selling odds and ends but no QRP+'s was none other than KG7CR, Bruce Franklin, father of the QRP+. After introductions I inquired about a second qrp-1 group purchase. He said sure, just as long as there is a minimum of 10 buyers in the group...same price as before. We chatted about the backlog of orders, units per month being manufactured, and parts procurement problems. Seems demand has far and away exceeded expected sales of the QRP+.

Well folks, I'd be willing to coordinate a second group buy. How about we plan on doing another group buy in late May or early June? Only takes 10, ladies and gentlemen, and I'm in so 9 more :) I'll end up paying 8.2% tax on my purchase since I live in Washington state. Gig Harbor is across the Sound from me so I'll save some on shipping. Could do it sooner if the interest is there.

73's all
Stephen Lee
AB7HI

From owner-qrp-1@netcom.com Sun Mar 12 02:58:35 1995
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski)
Subject: Milliwatting article (long)
Date: Sat, 11 Mar 95 23:10:05 EST5EDT

Message-Id: <1995Mar11.231005.10767@wb3ffv.ampr.org>

11 March 1995: All right--I wasn't going to post this until after it appeared in the QRP Quarterly, but I can't stand it any longer, with all the milliwattting interest on the list lately, so here it is! I sent this in recently; don't know if it will make the April or July issue. This is essentially an article that I've had sitting on the shelf for a while, and finally decided to update it a bit and send it in. This is an attempt to get a milliwattting column going in the QRP Quarterly; don't know if it will "take", which depends on the readers, but I can write one or two more even without any significant reader input. (And I'll be asking people on qrp-l if I can use the things they post about milliwattting/microwattting in it, too.)

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WATTS ARE FOR WIMPS--MILLIWATTING: QRP FOR QRPERS

subtitle--An article, and maybe a column

Michael A. Czuhaiewski WA8MCQ
7945 Citadel Drive
Severn, MD 21144

start italics

Authors intro--During a recent round of e-mails about QRP, WA8LCZ mentioned that the QRP ARCI doesn't seem to place much emphasis on REAL QRP operation, under one watt. He's quite right; there isn't much about the sport of milliwattting in the QRP Quarterly, and I think it's time to try to change that.

Back in the Bad Old 100 Watt Days of the QRP ARCI, all of the club awards were oriented toward 100 watt or less operation, even though they had QRP in their names. I struck my blow for real QRP in those days; I was on the board of directors in the late 60's, one of a small number of true QRPers in the QRP ARCI at the time; I proposed an award for working States with five watts or less, starting out at twenty. It was quickly accepted, and I hastily wrote up the rules, designed the certificate, etc. It was known as WAS/QRPP, in contrast to the Clubs WAS/QRP award for doing it with 100 watts.

Perhaps it's now time to strike another blow for QRP, by trying to

stir up some interest in even lower power--QRP by QRP standards, or milliwatting. Just like those interested in "true QRP" in the Bad Old 100W Days of the club, milliwatters are out there but seldom heard from. I'd like to try to change that. This is an article I wrote about the subject a while back. I'd like to make it the first installment of a column, if there is enough interest in milliwatting (which we'll define as anything under one full watt). Let me know what you're doing with milliwatts, and I'll print it in this column-to-be. Do you have any hints about operating in the milliwatts, thoughts about philosophy, how to get down there, anything at all? Let me hear from you, and we just might make this an occasional or regular column.

--WA8MCQ

end italics

Good old Sol is winding down and his complexion is clearing up--is it too late to write about this? Probably not. While the sunspots are on the way down and it's getting harder to accomplish some of the "QRP miracles" of a few years ago, the sport of "milliwatting" is still alive and well. (And those sunspots will be back--here's something to look forward to!)

While QRP has long been accepted as running 5 watts or less, to some it's 5 watts, period. Some people throttle their rigs down, down, down to the magic 5 watt limit, work a few states, then crank it back up to a hundred watts and brag about their QRP expertise. There's nothing at all wrong with that, of course; we're always glad when someone tries QRP, and especially when they tell others about it. But for true, died in the wool QRPers five watts looms as a menacing plateau which is to be viewed only from a distance, with loathing and apprehension--who needs all that power? (Just to be safe, when I use "high power" I hold it to 4 watts to give a safety margin.)

Although the QRP "legal limit" is 5 watts, many folks run less than that. There are a lot of rigs out there, homebrew and kits, which run just a watt or two. That may be a bit more difficult and challenging than running the Full Five, but even at the one watt level there may come a time when it all becomes a bit boring and routine. That's when it's time to crack the barrier, forsake the watts and dip into the milliwatts!

The subject of milliwatting (which is "QRP for QRPers") has been covered over the years by some of the QRP giants such as G4BUE (3

articles in SPRAT) and W0RSP (in one of his columns in CQ) but deserves more attention. There's a lot of fun down there for even the most jaded QRPer, and perhaps especially for them. Are you one of the QRP converts who came from the 100 watt arena and was amazed and astounded that a mere 5 watts could do so well? After a while it may get to be a bit too easy--go into the milliwatts and you'll probably have the same excitement all over again.

In the late eighties, while I was a QRPer but before I started serious milliwatting, I heard an HC2 calling CQ on 20M. I cranked the power control on my TS-430S all the way down and gave a call. I didn't know how much power it was, but the external wattmeter wasn't moving--and it was on the 20 watt scale! There is nothing to compare with the thrill of the first time DX comes back to you with the wattmeter stuck at zero!

GETTING TO THE MILLIWATTS

How to get there? Lots of rigs, both commercial and kit/homebrew, have power controls which let you throttle them back. Crank the carrier control down and my TS-430S will go to a quarter watt or lower depending on the band and how long the rig has been turned on. (I later found out I was running about 30 mW when I worked the HC2.) The TS-440S acts the same way, and the newer Kenwoods (like the TS-450S and TS-850S) are even better--they have two front panel controls which set power and you can go down easily into the single digit milliwatts with them.

To check into the Saturday morning QRP net on 7040 KHz with milliwatts, I turn on my TS-430S about a half hour early. From a fresh start it puts out about 160 milliwatts, and as it warms up that drops to the vicinity of 40 mW. But that's usually too much for me, so I add attenuators to the output; I have a few 6 dB units which I insert in the antenna line. The effect on receive signals isn't serious, and each 6 dB cuts my power by 4 times.

MEASURING THE MILLIWATTS

How to measure power down that low? You'll need a good QRP wattmeter, such as the fabled Welz RP-120 or perhaps the Oak Hills Research WM-1 (which is a cross between the W7EL wattmeter in the February 1990 issue of QST and the GM4ZNX (Stockton) wattmeter from SPRAT). I built the W7EL from scratch and it's nice, but for regular use I prefer an alternate method--using a diode detector on a 50 ohm dummy load. I switch my rig to the load, read the peak voltage off my digital voltmeter, square it with a calculator and mentally divide by 100 to get watts. (That's simpler than converting to RMS, squaring that and dividing by 50. Due to the math, which involves

squaring 0.707, if the load is exactly 50 ohms the peak voltage can be squared and then divided by 100. But if you use a regular RF probe on a dummy load, it most likely contains an internal resistor to form a divider with the input resistance of a DVM and scale the readings down to RMS. In that case you square the voltage and divide by 50.)

I prefer to measure the power at a relatively high level, such as 40 mW or above, where accuracy is better, and then add the attenuators. They give precise, repeatable reductions. You can buy some at hamfests (not always a bargain), or make your own from scratch. The recent W1FB books, as well as Solid State Design for the Radio Amateur, have details. I'd recommend a couple of 3 dB (1/2 power) and perhaps one for 6 dB (1/4 power); that gives a good range to start with. You can get by with garden variety resistors of 5% tolerance; it may not come out to exactly 3.0 dB but that's OK--the important thing is to know the exact value so you can figure your power. (My article in the October 1994 QRP Quarterly dealt with calibration of attenuators with DC and a voltmeter.)

WHAT CAN MILLIWATTS DO?

So, what can you do with milliwatts? The QRP Quarterly once announced that Brice Anderson, W9PNE, had completed WAS with 50 milliwatts and already had thirty-something with 25 mW--and that was several years ago. Randy Rand, AA2U, has DXCC with 100 milliwatts. During the height of the sunspots I worked into Europe quite a few times on 20, 15 and 10 meters with 65 milliwatts and under--and that's with just a 40 meter loop antenna feed with coax (lots of feedline loss).

Then there was the 1990 ARRL Ten Meter contest where I made 20 contacts with an average power of 32 mW, and the highest was a blistering 52 mW. I worked the entire West Coast plus Yugoslavia. The average Miles Per Watt figure was about 61K and the Yugoslavian was 143K. (During routine operation, figures of 40K and over became routine and commonplace.) A week after the contest I checked into the Saturday morning QRP net on 7040 KHz with WA1JXR while running 1.23 milliwatts, for 284K MPW. I don't usually run that low for the net, but I've checked in a few dozen times with him at under 100 mW, and over a dozen at 10 mW or less. The next day I did some experiments with a ham exactly a half mile away, going as low as 69 nanowatts--that's 0.069 microwatts! (That is the subject of an upcoming QRP Quarterly article.)

During one DX contest in 1990 I heard J6DX, a multi-operator effort by some Americans. I called but all he said was "WA8? QRP"; I repeated my call twice, and he came back with "Hi Mike, how much

power are you running"!!! I never did find out who the operator was, but he certainly heard my 45 mW.

Sometimes it got to be an obsession when the bands were really hot and the Milliwatt Miracles kept on coming. During some of those DX contests I worked European after European on 10 meters with under 50 mW; sure, I'd have to call only the strongest signals to have any hope of being heard. There were LOTS of wasted calls, but many of them did hear me and it was great! There were many times when I'd call someone a couple times, get no answer, and I honestly could not force myself to crank up the power to even 100 mW to make the contact; it was almost a sickness--Milliwatt Fever! (I swear on my copy of The Joy of QRP that it's true.) I'd sometimes go for days on end with the power control on zero.

Of course, all this will be more difficult when the sunspots drop, but that doesn't mean the good times are over; even during the Dark Years there will be occasional good times. If you turn on the rig and the bands are stinko, pour on the coals and run whole watts; but if signals are way up there, try the milliwatts. (You don't have to go bananas at first; start out with something easy like 1/2 or 1/4 watt to get your feet wet.) You could be pleasantly surprised. And you don't have to work DX, either--just working a few states away with a handful of milliwatts can be quite a thrill.

When QRP at the 5 watt level, or even 1 or 2 watts gets boring and routine, remember--Watts are for Wimps!

--qrp--

--

Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From owner-qrp-l@netcom.com Mon Mar 13 02:42:44 1995
Date: Sun, 12 Mar 1995 23:30:50 -0500 (EST)
From: Jim Stafford-W4Q0 <w4qo@america.net>
Subject: Re: More Happy Faces...
Message-Id: <Pine.SV4.3.91.950312232711.18879A-100000@atl1.america.net>

Dave, Outstanding! Please write this up for the Qrp Quarterly. This is the kind of thing that we all should be doing more of and this is the rig that i suggest we concentrate on as a project for the qrp-l and P/R for QRP. I plan to have some operating at Ham Radio '95, the hamfest in Atlanta on April 8/9 where we plan to feature an area called the Radio Zone - all for youth. Several of the RadioActive Schools (sm) in our area are participating. Thanks for the words of encouragement for all of us.

73/72/jim/w4qo

On Thu, 9 Mar 1995, david (d.) burniston wrote:

> Last night we finished up 10 of the 13 Ten*Tek Regenerative SWL
> receivers, hokked up an antenna and headphones and 9 out of 10 worked
> first time! Number 10 had a cap in the wrong place. Fixed that and away
> it went.
>
> Dave
> VE3LFO ***All Opinions Are My Own *****
>

From owner-qrp-l@netcom.com Sun Mar 12 17:49:49 1995
From: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org (Mike Czuhajewski)
Subject: Need frequency info on Scout
Date: Sun, 12 Mar 95 12:21:26 EST5EDT
Message-Id: <1995Mar12.122126.5391@wb3ffv.ampr.org>

Someone sent me an item for my Idea Exchange column in the QRP
Quarterly on modifying an unused plug-in module for WWV reception at 15
MHz, but the math in various examples he gives simply does not pan out.
If someone has this rig, could you tell me the IF frequency and the VFO
range, and whether the VFO tunes from low to high or from high to low
when going from the low end of a band to the top? It would also be
helpful if you could pull out a couple of the modules and tell me the
frequency of the crystals on them; I would especially like to verify
the freq for the 80M module he gave me (he said it was a 7.444 MHz
rock, said the IF is 6.144, and that the VFO is 2.2 MHz on the low end
of a band; these numbers fit some, but not most, of the examples he
gave me). 73 and Queue Our Pea DE WA8MCQ

--

Mike Czuhajewski, user of the UniBoard System @ wb3ffv.ampr.org
E-Mail: Mike.Czuhajewski@hambbs.wb3ffv.ampr.org
The WB3FFV Amateur Radio BBS - Located in Baltimore, Maryland USA
Supporting the Amateur Radio Hobby, and TCP/IP InterNetworking

From owner-qrp-l@netcom.com Sun Mar 12 13:19:12 1995
From: JEVERHART@cayman.VF.MMC.COM
Date: Sun, 12 Mar 1995 10:56:13 -0500 (EST)
Message-Id: <950312105613.22e20403@carib.vf.mmc.com>
Subject: RE: NorCal 40A Build Results

Wayne, in response to my request for advice, you wrote:

> Joe,

>> 1. I, too have the audio gain control pretty high. Perhaps it's not a
>> problem and I'll not mind the audio when I've used the rig on the air,
>> but it seems I have to crank the audio pot up all the way to get
>> reasonable headphone volume.

> Mine is set at about 60% clockwise. I find that headphones vary a lot in
> their sensitivity; cheap Walkman-style phones are pretty lousy. Try a
> good pair.

> Also make sure you have the receiver input filter adjusted as well as
> possible. You can lose a lot if they're not aligned right. And you need
> a good antenna ideally, and have the RF gain control ALL the way up, at
> least while you're aligning the AGC and receiver input.

>> 2. My AGC pot is about 95% fully ccw before I notice ANY AGC action,
>> then it's only on bonecrushing signals. HGaven't tried the schottky or
>> germanium diode fixes yet.

> Hmmm... this is partly related to having your AF gain turned up so high.
> But you could legitimately have an AGC range adjustment problem, too. I
> haven't had time to try the D5/D6 change yet. Another possible fix is to
> put a 3.3M (or thereabouts) resistor from the junction of D1 and D3 to
> ground. This should increase the range you get from the pot, but may
> also adversely affect the QSK delay when you key the rig. Please feel
> free to try this and let me know if it allows you to set the AGC pot
> correctly.

>> 3. The output stage gets mighty "squirrely" when I crank up the output
>> level above a watt (into a 50 ohm load thru my OHR wattmeter.)

> This is really weird -- I haven't heard of any other cases of NC40As
> oscillating on transmit EXCEPT with the driver transformer was a -61
> core. Here are a couple of possibilities:

> -- L6 is open at one end; you'd be able to tell because C39 wouldn't work
> right. You can tell C39 is working if you can find 2 identical peaks in
> the rotation range.

> -- Wrong value for the RF choke in the PA lead. If this choke were too
> high in value it might actually resonate somewhere near 7MHz--bad news.

> -- missing or wrong resistor value from base->ground on the PA.

> -- And, even though you checked it, make darn sure that you don't have a
> T37-61 at the driver transformer. If you suspect you might, try putting

> a 1K resistor across the primary (2N2222 side). If this calms things
> down it's probably a -61 core. The -43 cores are supposed to have a
> bright orange (or red) dot.

> Let me know if any of this helps. If all else fails I know someone you
> can send it to to get it debugged.

> 73,
> Wayne

Here's my update:

As for the "low audio" lack of agc action, I have done no further investigation. Your suggestion about using high quality stereo headphones is well taken. A pair of Sony 'phones gives plenty of volume. And I can live without agc as I've done for the last 30 years! Eventually I may get around to trying to see if I can get it working, but for now I'd rather just enjoy using the rig.

I reported earlier that the transmitter acted "squirrely" when the power was raised above 1 watt. Mea culpa. It turns out that I began the checkout with an HP bench supply. I found that its regulation was poor for load currents of 150 ma. and higher. So, when the transmitter power was above about 1.3 watts, the voltage dropped causing my difficulties. This was compounded by next using a gel-cell pack that was not fully charged. (It's normally solar-charged, but the weather hasn't been conducive that to here in the Mid-Atlantic.) Topping off the gel-cell battery gave GREAT results - almost three watts when fully cranked up and smooth power control from zero watts all the way up.

In the course of investigation, I double-checked T1's core material using my Autek RF Analyst as an impedance meter. T1's primary measured about 1900 ohms at 5 MHz. Predicted Z for a 37-43 core is 2600 ohms or 340 ohms for -61 material. Considering measuring inaccuracies and expected core permeability variation, this confirms that T1's core is the right material. I can foresee using the RF-1 on the bench as a handy checker for ferromagnetic core permeability as well as verifying the performance of rf transformers!

I've got to give you high marks on the 40A circuit design. Having done a fair amount of design for production, I know that reproducibility is not always easy to achieve even on a stable production line. You have done a great job in making a highly producible KIT that can be aligned with minimal equipment. That is truly an outstanding achievement. Having missed the first round, I'm anxiously awaiting the Sierra Rev A!

Wow, reading the above I can see that I have to teach this darned computer how to spell. I couldn't possibly be that bad, could I?

Thanks and 72/73,

Joe E. N2CX

From owner-qrp-l@netcom.com Sun Mar 12 22:22:29 1995
From: Michael Marmor <mmarmor@pluto.njcc.com>
Message-Id: <199503122345.SAA10744@pluto.njcc.com>
Subject: Norcal 40a results
Date: Sun, 12 Mar 1995 18:45:43 -0500 (EST)

Dear Wayne and the Gang,

My Norcal 40A is working great. It hears great, transmits great, and even has lots of audio using my Sony MDR-V6 headphones. I was concerned after reading other qrp-l mail that the audio would be weak, but this is not the case with my 40a/antenna/headphone combination. My AF gain pot (R8) is at about 40% of full rotation pointing to the 11 o'clock position - any more than this and the audio is too loud to be comfortable!

I do have a question about the AGC setting. I do not hear any receiver quieting until the AGC pot (R6) is turned almost full CCW. I believe that the instructions say that quieting should be heard between 50% and full clock-wise - this is not the case for my 40a. I do not think my AGC is adjusted correctly since I often have to turn down the RF gain control to keep a strong signal from distorting. These strong distorting signals are not my next door neighbors, but typical S9+ signals.

My only other question/complaint has to do with a "puhh puhh" sound I hear in my headphones in between dits when I key the rig. I suppose this could have something to do with my "high fidelity" headphones. Or perhaps I am not used to what really fast QSK sounds like. I like the QSK by the way, and I can live with the "puhh" sound - but if there IS a way to remove it I would.

Perhaps my AF gain is not properly adjusted? This might explain both the AGC problems and the noise between keying.

My 40A draws 15mA on receive and 271mA when transmitting 2 watts. Now to borrow a freq counter to find out what my VFO range is....

Even with these few problems my 40a is quite useable and makes me

very happy! It's a terrific little rig.

Michael Marmor - AA2UJ - mmarmor@pluto.njcc.com

From owner-qrp-l@netcom.com Sun Mar 12 19:36:14 1995
From: FOXG@WCSUB.CTSTATEU.EDU
Date: Sun, 12 Mar 1995 16:15:21 -0500 (EST)
Message-Id: <950312161521.2a022c9f@WCSUB.CTSTATEU.EDU>
Subject: QRP DXpedition

I believe I have all my ducks in a line, so please look for me as HI/WA1U operating from Punta Cana, Dominican Republic between 3/17 and 3/23. Rig will be a NORCAL40 to a dipole (hopefully between two palm trees right on the beach). I intend on operating at or near 7.040 as much as possible and appearing throughout the evening hours.

This operation will be from the Club Med in Punta Cana (it is a family oriented Club, honest). I took my wife and daughter there this time last year. In a discussion with the chef d'village (head guy), he said he couldn't see why anyone would mind and that if I came back, I should bring my toys. Recip license was applied for about a month and a half ago.

See you on 40.

Geoff WA1U

From owner-qrp-l@netcom.com Sun Mar 12 14:57:16 1995
From: Byron8LCZ@aol.com
Date: Sun, 12 Mar 1995 12:42:00 -0500
Message-Id: <950312124050_47041560@aol.com>
Subject: QRP portable

Hi Doc,

Have you tried putting two 40m mobile whips together with a U bracket and feeding them with coax to form a shorten dipole? It can be operated vertically or horizontally. You can load it up at any height, making it useful even if there arent any tall trees available. Of course, it will work better at a half wave above ground. My friend Walt WB8E uses such a set-up and likes it for "quick & easy". the whips can be had for 20 bucks each, (approx) and the u bracket could be fitted with a SO-239 coax connector. It should also be fairly light weight. Finding whips with adjustable whips long enough is the key to loading it up on the cw portion of the band. the whole package could break down to a 3 to 4 ft length by taking the whips out of the loading coils. with a few hand tools, you're ready to go. A sling shot will get it up in the trees easily and RG-8X coax will keep the losses fairly low. It sounds like a very workable solution for the ham on the go.

With a small flexible solar panel, you could even charge your battery while drifting down the river and be ready for an evening of QRP.

I plan on putting one of these antennas together this summer for QRP ops with my QRP Plus xcvr.

My current portable antenna is a dipole with ladder line feed and a tuner. for 40m it would be 66.5 ft total length, that could be 21.5 ft of ladder line (each side of the 450 ohm ladder line adds to the length of the antenna) and a horizontal length of 23.5 ft. you would have both horiz and vert polarization and semi-respectable height. Finding a small QRP tuner that handles ladder line is the only problem. The MFJ QRP tuner does, but is hard to find. they cant seem to keep it in stock. It handles coax, ladder line and random wire antennas, has a cross needle swr/power meter, covers 1.8 to 30 mhz and has 30/300 or a 6 watt range. It could be a great QRP tuner, i'm checking with my QRP buddies Tuesday nite to see how well they like it.

72, Byron WA8LCZ

From owner-qrp-l@netcom.com Sun Mar 12 19:37:58 1995
From: FOXG@WCSUB.CTSTATEU.EDU
Date: Sun, 12 Mar 1995 16:18:06 -0500 (EST)
Message-Id: <950312161806.2a022c9f@WCSUB.CTSTATEU.EDU>
Subject: QRPp antenna article

I was fascinated by Gary Breed's article on multi band antennas. Unfortunately the math accompanying the article doesn't seem to be complete, especially where multiple bands above two are concerned.

Has anyone else looked at this article with interest?
Has anyone loaded the formula into a spreadsheet (and will make it available)?

73, Geoff WA1U

From owner-qrp-l@netcom.com Sun Mar 12 21:36:04 1995
From: cb4@ukc.ac.uk
Message-Id: <199503122237.0AA12784@mail.netcom.com>
Date: Sun, 12 Mar 95 22:27:33 +0000
Subject: Subscribe

subscribe

From owner-qrp-l@netcom.com Sun Mar 12 20:33:18 1995
Date: Sun, 12 Mar 1995 16:56:35 -0600 (CST)
From: "Mitch, WA4OSR" <fmitch@ns1.netcom.com>
Subject: WTB: Motorola 68x05, 68xx11 stuff

Message-Id: <Pine.SOL.3.91.950312165405.28619B-100000@ns1>

hi mitch here...

i am in dire need of an ice and/or programmer for the '05
and '11 family of chips to be used for development work here
at vibroplex ... anyone have any suggestions?

mitch
wa4osr

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